

CLAIMS

What is claimed is:

1. A machine readable medium having stored thereon instructions, which when executed by a processor, cause the processor to perform the following:
 - calculating a first variance for a reported sales rate of an item;
 - calculating a second variance for an unreported sales rate of the item;
 - generating a first probability distribution for reported sales, during a delay time, of the item;
 - generating a second probability distribution for unreported sales of the item based on an update time of a ready to sell parameter; and
 - performing a convolution of the first and second probability distributions to obtain a probability of an availability of the item at an expected time of transaction.
2. The machine readable medium of claim 1, wherein performing a convolution comprises:
 - performing a convolution of the first and second probability distributions to obtain convolution values; and
 - summing the convolution values to obtain a probability of the availability of the item at the end of the delay time.

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1 3. The machine readable medium of claim 1, wherein the processor
2 further performs determining the reported sales rate and the unreported
3 sales rate.

1 4. The machine readable medium of claim 1, wherein the first
2 probability distribution is a negative binomial distribution for reported
3 sales during the delay time.

1 5. The machine readable medium of claim 4, wherein the negative
2 binomial distribution is determined by recursive calculation.

1 6. The machine readable medium of claim 5, wherein the second
2 variance is calculated based on an experience level parameter.

1 7. The machine readable medium of claim 4, wherein the second
2 probability distribution is another negative binomial distribution for
3 unreported sales during the delay time.

1 8. The machine readable medium of claim 1, wherein the sales rate is
2 the rate of sales for a plurality of time units averaged over the plurality of
3 time units.

1 9. The machine readable medium of claim 8, wherein the processor
2 further performs adjusting the sales rate to reflect a rate of sale for a
3 particular time period corresponding to the delay time, the particular time
4 period falling within the plurality of time units.

1 10. The machine readable medium of claim 1, wherein generating a
2 second probability distribution comprises generating the second
3 probability distribution for unreported sales of the item based on an
4 update time of inventory data.

1 11. An apparatus, comprising:
2 means for calculating a first variance for a reported sales rate of an
3 item;
4 means for calculating a second variance for an unreported sales
5 rate of the item;
6 means for generating a first probability distribution for the
7 reported sales rate to obtain a number of units of the item sold during a
8 delay time;
9 means for generating a second probability distribution for the
10 unreported sales rate based on an update time of ready to sell data; and
11 means for performing a convolution of the first and second
12 probability distributions and summing to obtain a probability of an
13 availability of the item.

1 12. The apparatus of claim 11, wherein the means for performing a
2 convolution comprises:
3 means for performing a convolution of the first and second
4 probability distributions to obtain convolution values; and
5 means for summing the convolution values to obtain a probability
6 of the availability of the item at the end of the delay time.

1 13. The apparatus of claim 11, further comprising means for
2 determining the reported sales rate and the unreported sales rate.

1 14. A method, comprising:
2 calculating a first variance for a reported sales rate of an item;
3 calculating a second variance for an unreported sales rate of the
4 item;
5 generating a first probability distribution for reported sales, during
6 a delay time, of the item;
7 generating a second probability distribution for unreported sales of
8 the item based on an update time of a ready to sell parameter; and
9 performing a convolution of the first and second probability
10 distributions to obtain a probability of an availability of the item at an
11 expected time of transaction.

1 15. The method of claim 14, wherein performing a convolution
2 comprises:
3 performing a convolution of the first and second probability
4 distributions to obtain convolution values; and
5 summing the convolution values to obtain a probability of the
6 availability of the item at the end of the delay time.

1 16. The method of claim 14, further comprising determining the
2 reported sales rate and the unreported sales rate.

1 17. The method of claim 14, wherein the sales rate is the rate of sales
2 for a plurality of time units averaged over the plurality of time units.

1 18. The method of claim 17, further comprising adjusting the sales rate
2 to reflect a rate of sale for a particular time period corresponding to the
3 delay time, the particular time period falling within the plurality of time
4 units.